peak breeding season was in May to September.

The reduction in or lack of reproductive activity during winter in *Mus* spp. has been reported in other species of rats and mice also (Sadleir 1969; Schiller 1956; Whitaker 1940), and the same has been attributed to short day light or low temperature under which conditions the testes may become abdominal and spermatogenesis may stop.

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9. SEX RATIO AT BIRTH IN SOME CAPTIVE WILD MAMMALS

The determination of accurate sex ratio at birth of wild mammals is only possible from the birth records in captivity. From the available literature, it appears that the information available on this subject is limited. This paper presents the data pertaining to sex ratio at birth of 17 species of wild mammals observed at Nandankanan Biological Park, Orissa during the past 15 years (from 29-12-1960 to 31-12-1975). The details of our observations are given in the table below.

A study of this table reveals that there is a remarkable uneven sex ratio at birth with the females outnumbering the males in five species, Tiger, Golden Cat, Hog-Deer, Indian Sambar and Mouse-Deer; whereas the males outnumber the females in eight species, African Lion, Leopard, Common Palm Civet, Common Mongoose, Nilgai, Spotted Deer, Barking Deer and Blackbuck. The number of observations made on four species, Jackal, Rhesus Macaque, Bonnet Macaque and Slow Loris are inade-

TABLE

Species of Mammals	Total	Males	Females	Sex ratio (No. of males to 100 females)
Tiger (*Panthera tigris*)	18	6	12	50:100
African Lion (*Panthera leo leo*)	21	12	9	133.3:100
Leopard (*Panthera pardus*)	38	22	16	137.5:100
Golden Cat (*Felis temmincki*)	8	3	5	60:100
Jackal (*Canis aureus*)	3	1	2	50:100
Common Palm Civet (*Paradoxurus hermaphroditus*)	30	21	9	233.3:100
Common Mongoose (*Herpestes edwardsi*)	6	5	1	500:100
Rhesus Macaque (*Macaca mulatta*)	3	2	1	200:100
Bonnet Macaque (*Macaca radiata*)	3	1	2	50:100
Slow Loris (*Nycticebus coucang*)	2	1	1	100:100
Spotted Deer (*Axis axis*)	143	73	70	104.3:100
Hog-deer (*Axis porcinus*)	9	3	6	50:100
Indian Sambar (*Cervus unicolor niger*)	73	31	42	73.8:100
Barking Deer (*Muntiacus muntjak*)	62	33	29	113.8:100
Mouse-Deer (*Tragulus meminna*)	6	1	5	20:100
Nilgai (*Boselaphus tragocamelus*)	14	10	4	250:100
Blackbuck (*Antilope cervicapra*)	39	21	18	116.7:100

quate to come to any conclusion. However it is felt that much more observations are necessary to confirm these findings.

DISCUSSION

Thirty-two tiger (*Panthera tigris*) cubs were born in eleven litters to one tigress from 1948 to 1959 at New York Zoological Park, the divisions of sexes being nineteen males and thirteen females (Crandall 1965). According to Schaller (1972) the sex ratio of 196 tiger cubs at birth in various Zoological Gardens was 100 males to 100 females. He further states that on 121 occasions adult tigers were encountered in the wild and of these 102 were females and 19 were males, a ratio of about 5:1.

Schaller (loc. cit.) states there were 10 males and 13 females among 25 newborn spotted deer (*Axis axis*) fawns in the Calcutta Zoological Garden, but figures from such a small sample have little relevance. He further states that the disproportion of adult spotted Deer in the wild may be due either to an unequal sex ratio at birth, a higher mortality of male fawns, or both. About Hog-Deer (*Axis porcinus*) Schaller (loc. cit.) states that the sex ratio of adults was about equal or favoured the does only slightly, in contrast to the Spotted Deer which has a disproportionate sex ratio favouring females.

From his study at Kanha National Park, Schaller (loc. cit.) states that Sambar (*Cervus unicolor*) hinds outnumbered the stags by a ratio of about 3:1 and the reason for this great disproportion of the sexes is unknown, but it may be due to selective predation on the males, both as fawns and as adults and perhaps also to an unequal sex ratio at birth.

The ratio of bucks to 100 does among Blackbucks of Kanha National Park on July 1, 1964 was 71:100 whereas in the same Park the sex ratio on June 3, 1965 was 45 bucks:

100 does (Schaller, loc. cit.). He further states that at Sikandra the captive herd showed a higher proportion of bucks (84:100) than the free-living population.

The sex ratio of 36 births of Rhesus Macaque (*Macaca mulatta*) as given by Asdell (1964) was exactly even.

Information on sex ratio of other species mentioned in the table was not available to us from literature.

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10. DISCOVERY OF A PELICANRY IN KARNATAKA

Recently (first week of April 1976) I noticed a breeding Pelicanry of Spottedbilled or Grey Pelicans (*Pelecanus philippensis*) at Bellur and Bannalli villages of Mandya District of Karnataka State.

The Spottedbilled Pelicans were breeding alongwith hundreds of Painted Storks (*Ibis leucocephalus*). The nests of the Pelicans and Painted Storks were close to each other on the same trees. There are about ten nesting trees at Bellur and three nesting trees at Bannalli, standing in dry agricultural fields (non-irrigated) and in village backyards, very close to human residence.

The following are the details of the trees on which the Pelicans and Painted Storks nest at these villages.